

Application No.: 09/681184

Case No.: 58428US003

Remarks

This Amendment is in response to the Office Action dated August 20, 2004. Independent claims 1, 19, 33, and 39 have been amended. Claims 1-39 are presently pending. No new matter has been added.

§ 102 and §103 Rejections

Claims 1-2, 11-15, 19-20, 29-30, 33-35, and 36-39 stand rejected under 35 USC § 102(e) as being anticipated by U.S. Patent No. 6,280,037 to Smith (hereinafter "Smith"). Claims 3-7, 16-17, and 21-25 stand rejected under 35 USC § 103(a) as being unpatentable over Smith in view of U.S. Patent No. 5,748,828 to Steiner et al. (hereinafter "Steiner"). Claims 18 and 37-38 stand rejected under 35 USC § 103(a) as being unpatentable over Smith in view of U.S. Patent No. 5,872,654 to Shirochi (hereinafter "Shirochi"). The Applicants traverse these rejections.

Independent claims 1, 19, and 39 have been amended to clarify that the recited system or projector includes a dynamic displacement element that repeatedly displaces alignment of color-component sub-pixels generated by an electronic display panel(s) through a sequence of positions during each image frame. Independent claim 33 has been similarly amended to recite a step of dynamically and repeatedly aligning the color-component sub-pixels through a sequence of positions to form a color display during each image frame. The repeated displaced alignment of color-component sub-pixels during each image frame is described in the application with reference to Figs. 3-5. As described with reference to Fig 3 of the application:

Display system 50 includes a frame buffer memory 52 with red, green, and blue color component planes 54 that store at each of multiple addresses or locations 56 a value corresponding to the intensity of a color component for a pixel of a display image.... At successive times t1, t2, and t3, a portion (e.g., one-third) of the color component information for each of the color component planes 54 is delivered to and a corresponding partial image is rendered by a pixelated display device 58, such as a liquid crystal display or a digital micromirror device.... At each time t1, t2, or t3, display device 58 functions to render a portion (e.g., one-third) of the full-color image information. These partial full-color images are distinct from the successive monochrome images formed in conventional field sequential system 30.... The partial full-color images rendered at successive times t1, t2, and t3 by display device 58 overlap and are interleaved on a display screen to form an image 62. (Application pages 8-9.)

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In contrast to the repeated displaced alignment of the color-component sub-pixels during each image frame, as recited in the independent claims, Smith discloses a device and method for occasionally aligning images from green, red, and blue beams, such as "at the time of manufacture" or at other times "during the lifetime of the projection system." (Smith, col. 1, line 47 to col. 2, line 11.) Smith describes a projection system that is operated in a static manner without the dynamic alignment of sub-pixels repeatedly during each image frame. Rather than teaching or suggesting the subject matter of the independent claims, the static operation of the Smith projection system would lead a person of ordinary skill in the art away from the claimed dynamic alignment of sub-pixels repeatedly during each image frame.

Moreover, the dynamic alignment of sub-pixels repeatedly during each image frame recited in the claims is functionally distinct from the occasional manual alignment sequence described by Smith. Implicit in the alignment methods described by Smith is that an operator or technician would manually control the alignment:

...conventional techniques that are used to align the LCD display panels 22, 24 and 26 may consume a considerable amount of time in the manufacture of the projection system 5. Furthermore, such factors as aging and thermal drift may cause the LCD displays panels 22, 24 and 26 to fall out of alignment during the lifetime of the projection system 5. (Smith, col. 2, lines 5-11.)

This occasional, manually-controlled alignment of Smith is functionally distinct from the dynamic alignment of sub-pixels repeatedly during each image frame for purposes of dynamically forming complete display images. Applicants submit, therefore, that the occasional, manually-controlled alignment of Smith would lead a person of ordinary skill in the art away from the continuously dynamic alignment recited in the claims.

In response to Applicants' prior comments, the Examiner states that Smith discloses dynamic alignment of sub-pixels until the images are superimposed. Applicants concur. Once alignment is achieved, Smith operates the projection system statically without dynamic alignment of sub-pixels, and certainly without the dynamic alignment of sub-pixels repeatedly during each image frame as recited in the claims.

The Examiner further states that "there is no repeated cycling through a sequence of positions disclosed in the specification and claims." Applicants understand this statement to be referring to applicants' claims and application. Applicants note, however, that each of the

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independent claims explicitly recites repeated displaced alignment of color-component sub-pixels during each image frame, which is described in the application with reference to Figs. 3-5. Applicants submit, therefore, that the repeated displaced alignment of color-component sub-pixels during each image frame is recited in each independent claim and is described in the application.

The Examiner further states in apparent reference to Smith that "one structural device (Fig. 4) can have inherently different intended uses or different applications," but "can be inherently used to (sic, for) repeated cycling through a sequence of positions." Applicants submit that by this statement the Examiner combines an improper "obvious to try" rationale with an improper interpretation of inherent operation of a prior art system to reach an improper rejection of the claims.

Applicants submit that Smith, either alone or in combination with any other cited reference, does not provide any teaching or suggestion for repeated displaced alignment of color-component sub-pixels during each image frame, as recited in each independent claim. Instead, the typically static operation of the projection system of Smith would lead one skilled in the art away from the claimed subject matter. Accordingly, the Examiner's comment that the system of Smith "can be used" for repeatedly cycling lacks any teaching or suggestion in the prior art. Absent any teaching or suggestion, the comment that the system of Smith "can be used" for repeatedly cycling amounts to an "obvious to try" rationale, which is an improper foundation for the rejection.

The Examiner states that the system of Smith can be "inherently used" for repeated cycling through a sequence of positions. Applicants submit that Smith, either alone or in combination with any other cited reference, does not inherently describe repeated displaced alignment of color-component sub-pixels during each image frame, as recited in each independent claim. The proper standard for consideration of the inherent teaching of a reference is set forth as follows:

To serve as an anticipation when the reference is silent about the asserted inherent characteristic, such gap in the reference may be filled with recourse to extrinsic evidence. Such evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." (MPEP 2131.02)

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Inherent disclosure by a cited reference requires that subject matter omitted from the reference "is necessarily present" in the thing described in the reference. Applicants submit that Smith does not "necessarily" include repeated displaced alignment of color-component sub-pixels during each image frame, as recited in each independent claim. Rather, Smith describes an operation that is generally static. Applicants submit, therefore, that repeated displaced alignment of color-component sub-pixels during each image frame, as recited in each independent claim, is not "inherently used" by Smith or any of the other cited references.

None of the other references cited in the Office Action address these deficiencies of Smith. Accordingly, the Applicants submit that independent claims 1, 19, 33, and 39, as well as claims 2-5, 11, 12, 15-18, 20-26, 29, 30, 33-35 and 37-38 which depend therefrom, are patentable over the cited references for at least these reasons. The Applicants respectfully request withdrawal of these rejections.


In view of the above, it is submitted that the application is in condition for allowance. Reconsideration of the application is requested. Allowance of claims 1-5, 11, 12, 15-26, 29, 30, 33-35, and 37-39, as amended, at an early date is solicited.

Respectfully submitted,

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Date

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